

# Three-Body Forces: From Matter to Nuclei

ECT\* / HIC for FAIR Workshop, May 5<sup>th</sup>- 9<sup>th</sup>, 2014

(Program as of May 6<sup>th</sup>, 2014)

|                           | Monday, May 5 <sup>th</sup>  |       | Tuesday, May 6 <sup>th</sup>   | Wednesday, May 7 <sup>th</sup>  | Thursday, May 8 <sup>th</sup>  | Friday, May 9 <sup>th</sup>   |
|---------------------------|--|-------|--|---|--|---|
| Chair                     | A. Gezerlis  |       | H. Hergert   | V. Soma   | T. Papenbrock  | J. Carlson  |
| 9:30                      | <b>Opening Remarks / ECT*</b>  | 9:30  | <b>J. Vary</b><br>No-Core Shell Model with Three-Body Forces                                       | <b>A. Rios Huguet</b><br>Infinite Matter with Chiral Nuclear Forces   | <b>E. Epelbaum</b><br>Improved Chiral Nuclear Potentials   | <b>N. Kalantar-Nayestanaki</b><br>What Have We Learned About Three-Body Systems at Intermediate Energies? |
| 9:45                      | <b>H. Krebs</b><br>Chiral Forces up to N4LO  |       |  |   | 10:05  |   |
| <i>Coffee</i>             |  |       |  |   |  |   |
| 11:15                     | <b>T. Krüger</b><br>Three-Nucleon Forces in Neutron Matter                                     | 11:00 | <b>G. Papadimitriou</b><br>Recent Progress in Complex-Energy Calculations for Exotic Nuclei        | <b>N. Kaiser</b><br>Chiral Four-Body Interaction in Nuclear Matter / Exact Calculation of the Three-Body Contact... | <b>D. Lee</b><br><i>Ab Initio</i> Lattice EFT From Light to Medium-Mass nuclei                             | <b>D. Gazit</b><br>Correlations and Fine-Tuning in Three-Body Forces of Pion-full and Pion-less EFTs      |
| 11:50                     | <b>A. Carbone</b><br>Self-Consistent Green's Functions with Three-Body Forces                  | 11:35 | <b>J. Simonis</b><br>Towards Theoretical Uncertainty Quantification in Medium-Mass Nuclei          | <b>C. Wellenhofer</b><br>Nuclear Thermodynamics from Chiral Low-Momentum Interactions                               | <b>A. Roggero</b><br>Neutron Matter from Non-Local Chiral forces and Quantum Monte Carlo                   | <b>Discussion &amp; Closing Remarks</b>   |
| 12:25                     | <b>A. Calci</b><br>Evolved Chiral Hamiltonians in Nuclear Structure: Current Status and Future | 12:10 | <b>S. Ettenauer</b><br>Probing Three-Body Forces in Recent Mass Measurements at TITAN and ISOLTRAP | <b>T. Duguet</b><br><i>Ab-Initio</i> Bogoliubov Coupled Cluster Theory  | <b>A. Steiner</b><br>What Three-Body Forces Will Tell Us About Neutron Stars                               |   |
| <i>Lunch @ La Baracca</i> |  |       |  |   |  |   |
| Chair                     | T. Duguet  |       | R. Furnstahl   | K. Hebeler  | S. Gandolfi  |   |
| 14:30                     | <b>T. Papenbrock</b><br>Three-Body Forces in Matter and Nuclei                                 | 14:30 | <b>J. Carlson</b><br>Three-Nucleon Interactions in Light Nuclei                                    | <b>R. Furnstahl</b><br><b>(ECT* Colloquium)</b><br>The Era of Precision Nuclear Structure and Reactions             | <b>M. Petri</b><br>3N Force Effects in Experimental Observables  |   |
| 15:05                     |  | 15:05 |  |   | <b>J. Menendez</b><br>Masses and Spectroscopy of Medium-Mass Nuclei Based on Many-Body Perturbation Theory |   |
| <i>Coffee</i>             |  |       |  |   |  |   |
| 16:00                     | <b>S. Binder</b><br>Heavy Nuclei - <i>Ab Initio</i>  | 16:00 | <b>J. Lynn</b><br>Nuclear Green's Function Monte Carlo with Chiral Interactions                    | <b>A. Spyrou</b><br>Three-Body Forces in $2n$ Decay Experiments   | <b>I. Tews</b><br>Local Chiral Interactions for Auxiliary-Field Diffusion Monte Carlo                      |   |
| 16:35                     | <b>C. Barbieri</b><br>Chiral 3NF and Spectral Distributions in the Mid-Mass Region             | 16:35 | <b>S. Gandolfi</b><br>Progress in Microscopic Calculations of Nuclear and Neutron Matter           | <b>Discussion</b>   | <b>D. Lonardoni</b><br>Strangeness in Nuclei & Matter: The Importance of Three-Body Forces                 |   |
| 17:10                     | <b>H. Hergert</b><br>News from the In-Medium Similarity Renormalization Group                  | 17:10 |  |   |  | <b>A. Mukherjee</b><br>Quantum Monte Carlo with Non-Local Chiral Interactions                             |
| Dinner                    | ECT*   |       | La Baracca   | Hotel America   | Orso Grigio (Conference Dinner)  | Pizzeria Alla Mostra  |